Space News NASA ROUNDUP!

VOL. 36 NO. 13 | Johnson Space Center, Houston, TX | April 11, 1997

In this issue

Today, the Space News Roundup returns to its 35-year-old roots as a bi-weekly publication.

The Roundup's purpose, as always, is to inform employees about what's happening at NASA's prime human space flight center. But with the lightning-fast communication of the computer era and the on-line Daily Cyber Space Roundup able to provide "hot" news in an even more timely manner, the Roundup is changing its focus to include more in-depth coverage of employee and contractor activities and accomplishments.

The Public Affairs Office is seeking your help in identifying more of these kinds of stories. It has established an Editorial Board made up of representatives from a broad cross-section of JSC organizations to help guide the Roundup on policy issues, and soon will be establishing a system of liaisons from organizations and contractors.

The first Editorial Board met last week. Attendees were Human Recourses' Greg Hayes, Mission Operations' Randy Stone, Engineering's Jim Jaax and Michelle Monk, Comptroller Wayne Draper, the Shuttle Program's Carl Shelley, Space and Life Sciences' Judith Robinson and Public Affairs' Doug Ward.

The Roundup staff hopes you enjoy the new paper and invites you to contact us with your contributions and suggestions. Details on how to do that are in the masthead on Page 8.

The four volunteers who spent 60 days in a sealed chamber document their stay in pictures. **Page 4**

The Scientific and Technical Information Center hosts an open house. **Page 5**

Workers begin to build the Manned Spacecraft Center in Clear Lake. **Page 6**

U.S. students fly experiments on KC-135

Twenty-four teams of undergraduate college students from around the country are "floating" through school this month aboard a NASA research aircraft based at JSC's Ellington Field facilities.

Called the 1997 NASA Reduced Gravity Student Flight Opportunities, the pilot program is funded by NASA and administered by the Texas Space Grant Consortium. Students from as near as Texas A&M and as far away as Michigan and Idaho are taking advantage of the KC-135 aircraft and support at Ellington Field for two weeks of briefings, training, preparation, and finally, flight. The program's flight phase began Monday, April 7.

Each team consists of up to four undergraduate-level college students, a supervising professor and a local professional journalist. All will fly except the supervising professor. Teams are flying experiments aboard the KC-135A aircraft that flies a roller-coaster-like flight profile over the Gulf of Mexico.

During each two-to-three-hour flight, the aircraft maneuvers through steep climbs and descents. At the top of each ascent, passengers inside the aircraft experience 25 to 40 seconds of weightlessness. The teams are designing, building, testing, and operating experiments that take advantage of the reduced-gravity environment. In addition to performing the experiments, each team will develop a program for sharing its research results with teachers, students, and the general public.

During the first week, participants received pre-flight training and assembled their experiment packages. This week, they are flying with experiments and conducting post-flight debriefings and reviews. Each team will fly twice. Depending on the precise trajectory, passengers and their experiments can experience about 25 seconds of zero gravity, 30 seconds of one-sixth gravity (the same as the gravity on the surface of the Moon), or 40 seconds of

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JSC Photo S97-03961 by Benny Benavides

CONGRESSIONAL REVIEW—Astronaut Kevin Chilton, right, explains the workings of the International Space Station to, from left, U.S. Reps Nick Lampson and Sheila Jackson Lee, both D-Texas; Astronaut Shannon Lucid; and U.S. Rep Bud Cramer, D-Ala.

New science center allows scientists more access

By Toni Loftin

A new science center to monitor shuttle experiments is under development as a cooperative effort of the Space and Life Sciences and Mission Operations Directorate.

The new center will allow scientists to monitor experiments aboard the shuttle, giving them more access to data such as vehicle system displays, payload systems, shuttle orientation and other previously unavailable information.

The center is part of an effort to maximize resources and consolidate operations.

"We want to provide the best operational support capability," said Bonnie Dunbar, assistant director of MOD, "We want to provide the very best environment to produce the very best data. We in Mission Operations are very interested in customer expectations for the scientific productivity of the flights."

The new facility will be located on the second floor of Bldg. 30, in a previous flight control room. The center will be a combination of MOD hardware and Life Sciences software. The center also will include MCC-style features such as a front screen display and a viewing room.

"What we are doing is taking two worlds, the Life Sciences and the MOD worlds and bringing them together," said Steven Gonzalez, project manager in charge of startup for the science center. "One of the good things about this room is that scientists that come in from different institutions, different countries can bring in whatever equipment they want and plug it in and get whatever data they need."

Ten consoles have been installed, and will be used to monitor life sciences experiments during STS-84. When completed in September, the center will have eighteen consoles. STS-90 will be the first completely operational mission for the center.

Faulty fuel cell forces STS-83 early return

Space shuttle managers Sunday decided to cut short the STS-83 Microgravity Science Laboratory-1 mission because of problems with one of *Columbia*'s three fuel cell power generating units.

Commander Jim Halsell, Pilot Susan Still, Payload Commander Janice Voss Mission Specialists Mike Gernhardt and Don Thomas, and Payload Specialists Roger Crouch and Greg Linteris were scheduled to land at 1:33 p.m. CDT Tuesday at Kennedy Space Center. Fuel cell 2 was shut down by the crew Sunday and several pieces of non-critical equipment was powered down so that electricity could be used to perform as much experiment work as possible.

"In the short time that we have been here (in space), thanks to the hard work of the payload people onboard *Columbia* and at Huntsville, we have been able to put together a good science program that will bring back some meaningful science," Halsell said during a crew news conference on Monday. "It's true everybody is disappointed that we have to come home early, not only the crew but the investigators and researchers whose science we are up here to accomplish."

The three shuttle fuel cells generate electricity by combining liquid hydrogen and oxygen and creating, as a byproduct, water. Although only one operational fuel cell can provide sufficient electricity to safely conduct *Columbia*'s orbital and landing operations, shuttle managers decided to end the mission early due to the loss of the failed fuel cell as a backup to the two currently operating cells. The loss of the fuel cell also reduced the amount of power available for experiments.

"We depend on electricity to fly," Halsell said. "Therefore, when you lose one third of your electrical producing capacity you have to consider that. After we had to save fuel cell 2, we had a little pow-wow on the flight deck and we made sure we understood all the emergency procedures as modified by the fact that fuel cell 2 had been shut down."

The early landing is only the third in the shuttle program's 83 flights behind STS-2 in November 1981 and

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Hubble check-out finds successes, concerns

Telescope captures sharpest views of Mars

The post-servicing checkout of NASA's Hubble Space Telescope, currently about halfway complete, has found Hubble in overall excellent health, with seven of the eight components replaced during the servicing mission functioning very well.

However, a concern with one of the instruments is being evaluated.

"The Hubble Telescope is checking out extremely well overall, and the few anomalies we see give us no reason to believe we will not be able to meet all our scientific goals," said Ed Weiler, Hubble program scientist at NASA Headquarters. "I'm very impressed that in just the few weeks since the servicing mission, we've already seen Hubble take the best images of Mars ever obtained from Earth's distance. Every observatory commissioning encounters some problems, but we're on track to clear up all our remaining concerns."

Earlier this month science observations resumed, and on March 10 the science team obtained images of Mars. The images clearly show clouds, dust storms, polar caps and other bright and dark markings known to astronomers for more than a century. Taken just before the red

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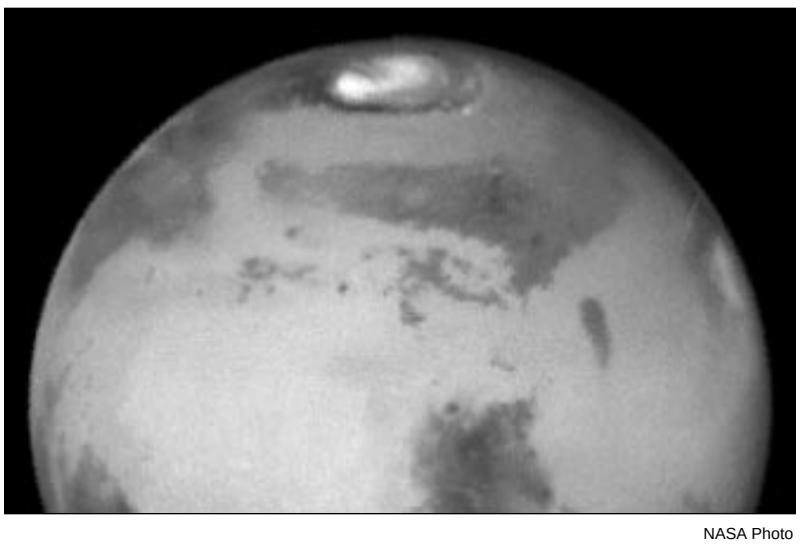

NASA Photo

The sharpest view of Mars ever taken from Earth was obtained by the recently refurbished NASA Hubble Space Telescope. This portrait was taken on March 10, just before Mars opposition, when the red planet made one of its closest passes to the Earth.